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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,905	10/04/2000	Nils Lindskog	1318	4042

7590 03/09/2004

Alfred J Mangels  
4729 Cornell Road  
Cincinnati, OH 45241-2433

EXAMINER

VINCENT, SEAN E

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/601,905

**Applicant(s)**

LINDSKOG ET AL.

**Examiner**

Sean E Vincent

**Art Unit**

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. The phrase "within the interior" was not used to describe the location of the resistor heating elements or the thermocouples in the originally filed specification and claims. The text of the specification applicant relies upon for support uses the same language of the original claims, not the amended language. Figure 1 appears to illustrate a location of the heating elements and the thermocouples within and interstitial area between two layers, but figure 3 appears to illustrate that the heating elements and thermocouples are arranged on the outer surface of the furnace walls. Figure 2 lacks enough detail to clarify the position of the heating elements and thermocouples. Applicant is requested to provide the exact location of literal support for the claim amendments, if it exists.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-4, 6-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monks et al (US 3585268) in view of Jung (US 2422734).

6. Monks et al teaches all that is claimed in claims 1, 2, 3, 4, 6, 7, 8, 9 and 11 (Fig. 1 and 2, ref. no. 16, 15, 14 and col. 1, lines 62-68, the spiral heating element 16 is inserted into elongated notches 15 which served to hold the heating element 16 as a spiral in a tube); except using thermocouples to monitor and control the temperature of the walls.

7. However, Jung teaches that it is known in the electrical resistance heating art to use thermocouples to measure the temperature on the roof, walls and floor of electric resistance furnaces and then controlling the amount of heat applied to the resistances based upon the thermocouple readings (col. 3-4 and Figure 1, ref letters 1, P, a, b, w). It would have been prima facie obvious at the time the invention was made to combine Jung's teachings with Monks' method and apparatus of conditioning glass because doing so would provide control over the heating and melting of the glass. Moreover, using a heating control system would prevent excessive or insufficient heating of Monks glass batch. Furnaces typically have feedback control mechanisms as delineated by Jung to control the heating of the contents in the furnace.

8. Jung did not teach that the thermocouples were within the interior of the furnace walls. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to locate the thermocouples in notches similar to those used for the heating elements of

Art Unit: 1731

Monks et al because it would have allowed the most accurate temperature measurement and control of the heating elements of Monks et al as suggested by Jung.

9. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monks et al and Jung as applied to claims 1 and 7 above, and further in view of Thompson (US 1603221).

10. Monks et al in view Jung do not teach the resistor element being in band-shaped form. However, Thompson teaches that it is well known in the resistor heating art to form the heating element into band shaped form (Fig. 1, ref. no. 4a, 4b, page 1, lines 70-80). It would have been prima facie obvious at the time the invention was made to combine Thompson's teachings with Monks in view of Jung's method and apparatus of conditioning glass because doing so would provide more uniform heating by permitting more exposure of the glass to the resistor elements, e.g. the multiple wrappings of the band shaped heating element would provide more coverage of the glass melt.

### ***Response to Arguments***

11. Applicant's arguments filed December 3, 2003 have been fully considered but they are not persuasive.

12. In response to the argument that Jung did not teach heating elements within the interior of the furnace walls, the examiner notes that Monks et al taught this feature. The feature missing from Monks et al was the measurement of the temperature within the interior of the furnace walls. Jung did not need to teach that heating or measuring was conducted within the interior of the furnace walls since Monks et al provided a clear teaching of heating elements located in

Art Unit: 1731

notches within the walls. As stated in the rejection, the most accurate temperature control would have resulted from locating the thermocouples as close as possible to the heating elements.

13. In response to the argument that Thompson did not teach band-shaped heating elements, the examiner disagrees. The applicant appears to be basing this argument on the shape illustrated in figure 7. Since figure 7 was not an original drawing, and it is assumed that it contains no new matter, figure 7 should depict the same element as illustrated in figure 1 by reference numbers 24-29 (see the amendments to the specification dated 2-21-03). The heating elements of Thompson were shown wound around the tubular crucible in much the same way as the elements 24-29 are wrapped around the ceramic material of applicant's furnace. Newly added figure 7 must be viewed as figure 1 without the furnace running through the center of the heating element, otherwise it would be new matter.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

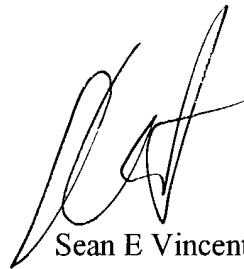
15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1731

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is (571) 272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sean E Vincent  
Primary Examiner  
Art Unit 1731

S Vincent